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ABSTRACT

This manual recommends procedures for developing and operating a rural-based distance learning consortium. Following some brief definitions and an outline of the three basic essentials for success (trust, shared vision, and suitable telecommunication infrastructure), guidelines for developing a distance learning consortium are presented in five phases: (1) starting a consortium; (2) setting up the distance learning system; (3) preparing for distance learning instruction; (4) operating and managing the distance learning system; and (5) moving toward institutionalization. Discussion includes how to: identify potential telecommunications partners; develop a planning task force; form a coalition of participating school districts/higher education institutions; form a group of local district distance learning coordinators; secure technical telecommunication agents; complete technical preparations with telecommunication providers; bring member sites online; conduct first-year public relations; plan course offerings; identify and train teachers; involve the community; operate distance learning classrooms; manage the distance system, staff, and equipment; and move toward institutionalization. Fifteen appendices include various supporting documents. (AEF)

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HOW TO START AND MAINTAIN A RURAL-BASED DISTANCE LEARNING CONSORTIUM

CREATING CONNECTIONS

A PROJECT OF ET-LINC

East Texas Learning Interactive Network Consortium

Prepared by Macy Research Associates

Wills Point, Texas

March 1997

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HOW TO START AND MAINTAIN A RURAL-BASED DISTANCE LEARNING CONSORTIUM

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ABOUT THIS MANUAL

The purpose of HOW TO START AND MAINTAIN A RURAL-BASED DISTANCE LEARNING CONSORTIUM is to provide a readable resource for those interested in or participating in distance learning. The manual will be valuable reading for those planning to start a distance learning network and for those already involved. The Manual primarily has a direct, conversational tone and is not a typical academic paper. The Manual also contains Appendix material which provides more technical and detailed information for the interested reader.

The Manual is a product of ET-LINC, and ET-LINC assumes sole responsibility for its content and recommendations. The Manual is a product of the contributions, experience, and thinking of many people (Appendix M lists direct contributors to the manual).

Permission to copy the Manual (in part or its entirety) is granted by ET-LINC, as long as the use of copied material is for non-commercial purposes and does not result in generation of money or fees.

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INTRODUCTION AND BACKGROUND

The East Texas Learning Interactive Network Consortium (ET-LINC) was established formally in April 1994, with the formulation of bylaws and election of officers. Founding institutions included one university, one local telephone cooperative, and several school districts located in northeast Texas. The Consortium currently exists as a formalized operating agreement among members, with annual dues and a governing board.

The Creating Connections project was the first project undertaken by ET-LINC. Creating Connections was undertaken by Consortium members in order to reach the shared vision of a broad-band distance learning network serving rural school districts in east Texas. ET-LINC will continue to maintain and operate the Creating Connections distance learning network after completion of state funding. The Consortium is currently participating in other major projects and continues to develop and promote other externally funded projects.

The Creating Connections project was funded by the Texas Education Agency as authorized by the Texas Education Code (32.035) - Demonstration Programs. The opinions and recommendations cited by and equipment used in the Creating Connections project do not constitute an endorsement by the Texas Education Agency.

The Creating Connections state Program Officer is Dr. Delia R. Duffey, Project Director, Instructional Technology, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701.

WHY SHOULD THERE BE RURAL-BASED DISTANCE LEARNING CONSORTIA

The rationale for rural-based distance learning consortia includes several factors. Perhaps the primary motivation is to provide quality, competitive education for students in rural areas. The well-known migration of city-dwellers to rural areas speaks to the desirability of rural life, but historically rural schools have not been able to offer all of the educational advantages available in urban school districts.

The distance learning consortia give rural schools the means of providing expanded curricular opportunities, thereby making rural schools more educationally competitive with their urban counterparts. Rural distance learning consortia also increase opportunities for continuing education among adults, as well as promote higher education among rural students.

OVERVIEW OF THE CREATING CONNECTIONS SYSTEM

The distance learning system developed in the ET-LINC Creating Connections project is a broad-band (DS3) network carried by fiber-optic cable. The system provides two-way interactive full-motion video communication among up to four sites at one time. Classrooms are equipped with three cameras (teacher, student, and overhead document), eight monitors (overhead mount, four front and four rear), and ceiling-mounted microphones (wireless, remote microphone for teachers). The teacher workstation is a multi-media workstation including Internet connection, VCR, and fax.

The distance learning system currently includes 13 interactive classrooms, located in 11 small, rural northeast Texas school districts (Alba-Golden, Cumby, Gilmer, Gladewater, Greenville, Harmony, Mt. Vernon, Quitman, Rains, Winnsboro, and Yantis), one telephone cooperative (People's Telephone of Quitman), and one university (Texas A&M at Commerce). ETEX Telephone Cooperative of Gilmer also participates in the network but does not currently have an on-site interactive classroom. Expansion calls for inclusion of area community colleges and other school districts. Affordable hardware is now available to link broad-band (DS3) networks with those operating on the narrow-band (T1) networks.

HOW TO DO IT

Starting and operating your own rural-based **DL** (**D**istance **L**earning) consortium involves FIVE major phases. These are:

PHASE I.	STARTING A CONSORTIUM
PHASE II.	SETTING UP THE DL SYSTEM
PHASE III.	PREPARING FOR DL INSTRUCTION
PHASE IV.	CONDUCTING INSTRUCTION
PHASE V.	MOVING TOWARD INSTITUTIONALIZING THE SYSTEM

This HOW-TO manual describes critical steps and recommended procedures within each phase.

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THREE BASIC ESSENTIALS

There are three basic essential things that must be in place for success:

1. trust

2. shared vision

3. suitable telecommunication infrastructure

The telecommunication infrastructure must be able economically and legally to provide necessary telecommunication connections. Bear in mind that the telecommunication industry is highly regulated. Many telecommunication service providers must operate under layers of regulating limitations, as well as the economic necessity to realize acceptable profit levels.

BASIC DEFINITIONS

Distance Learning - Instruction delivered by any means to any single or multiple location(s) -

1) other than the "main campus" of a senior institution (or "on campus"),
2) via instructional telecommunications to any other distance location.

IHE - institution of higher education (university or college).

ISD - independent school district, the most common form of legal organization for Texas school districts.

PEIMS - Public Education Information Management System, a Texas schools information data base.

TAAS - Texas Assessment of Academic Skills, a state-wide testing program to measure student performance in basic achievement areas.

TEKS - Texas Essential Knowledges and Skills, a state-wide curriculum.

PHASE I. STARTING A CONSORTIUM

1. Identify Potential Telecommunications Partners.

Potential partners are any people who are interested in:

- supporting and creating 21st century rural communities
- enhancing education in rural schools and communities
- DL systems
- connecting to the global community
- life-long learning opportunities

When getting to know these people look for:

- enthusiasm
- dedication
- willingness to work
- spirit of cooperation

Creation of the consortium and DL system will require lots of hours and hard work.

PHASE I. STARTING A CONSORTIUM

2. Assemble a Planning Task Force. (4-7 members)

Select or cooperatively agree to form a planning task force for the purpose of developing a DL consortium. The planning task force should represent at least three community resource groups from the following categories:

1) educational institutions

2) telephone service provider or providers

3) telecommunications experts

4) community representatives

The planning task force members should provide some combination of the following skill areas:

Fiscal Management	Teaching
Grant writing	Training
Public relations	Technology expertise
Curriculum	Higher education counseling
Telecommunication	Leadership

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PHASE I. STARTING A CONSORTIUM

2. Assemble a Planning Task Force. ***continued***
(4-7 members)

Members of the planning task force should have the following qualities:

- High level of dedication and a long-term commitment to learners.
- High level of interest in the DL concept.
- Willingness to work over-time.
- Willingness to share openly and work collaboratively.
- Willingness to admit ignorance and eagerness to learn.
- Willingness to work with both educators and business people.
- Perseverance and patience.
- Openness to change and growth.

PHASE I. STARTING A CONSORTIUM

2. Assemble a Planning Task Force. ***continued***
(4-7 members)

Planning task force members have to be willing and able to work as a team and to do the work themselves. School superintendents and deans need to understand in advance that task force participation requires heavy demands on their time and work load. Superintendents and deans should be advised of the demands before they assume an active role on the task force.

Participating business partners should view DL as a long-term investment. The rate of investment return from the DL consortium should be much slower than from usual business operations.

The telecommunication provider(s) may be the most essential element in the whole process. Much of the success, or failure, of the system will depend on the understanding, cooperation, and support of the telephone provider, or providers.

In some cases, existing infrastructure and telecommunication service boundaries may require the inclusion of multiple providers. Life will be easier, however, if there is only one telecommunication provider. Multiple providers will result in compounded problems and workloads.

PHASE I. STARTING A CONSORTIUM

2. Assemble a Planning Task Force. ***continued***
(4-7 members)

Desired qualities of the telecommunication provider(s) include:

- Commitment to education.
- Willingness and ability to work with educators.
- Desire to partner with the consortium, in contrast to the usual business-customer relationships.

Meeting locations of the staff should create an open invitation and easy participation by all partners. A central geographic location is good but take care not to meet at the same educational institution every time. Meeting every time at school "X" could create the message and/or attitude that the Consortium or the DL system belongs to school "X". A strategy that worked very well for ET-LINC was to conduct the planning task force meetings at the offices of the telecommunication provider(s). This also helped to ensure on-going involvement with key telecommunications personnel.

PHASE I. STARTING A CONSORTIUM

3. Develop the Planning Task Force.

The planning task force could easily become the core management team, at least initially, for the DL system. This was the case for ET-LINC.

The planning task force has at least **four** major goals:

1) **Develop a cohesive relationship among planning task force members.**

- This requires the proper personal and professional qualities of members, considerable meeting time, and willingness of employers to tolerate flexibility in the work schedules of task force members.

2) **Educate task force members.**

- There is much to be learned, not only about DL, but also about change in the community. On-site visits to other DL systems are recommended highly.

- Become knowledgeable and cautious about vendor behavior and the marketing of technology. Things are frequently not as promised or described, especially in terms of quoted cost figures. Believe it when you see it, not before.

PHASE I. STARTING A CONSORTIUM

3. Develop the Planning Task Force. *Continued*

3) **Build support among superintendents.**

- Funding, in one way or another, will most likely be the driving motivation for superintendents. Funding can come directly from grant awards, or indirectly through sharing of salaried teachers for DL courses, or expansion of the curriculum without additional staff.

- One of the first questions asked by superintendents will be about the cost of the DL system. Be prepared to cite realistic dollar figures for DL classroom modifications, DL equipment, and on-going telecommunication costs.

- Competition among local districts may also be an incentive to superintendents; superintendent "X" may not want other districts to have something that he/she doesn't have.

- Other incentives may come from special recognition programs, such as the Academic Excellence Indicator System (a Texas evaluation program set by the legislature), or other distinguished achievement programs.

PHASE I. STARTING A CONSORTIUM

3. **Develop the Planning Task Force.** ***continued***

- Many school leaders especially high-level administrators are reluctant to express a lack of knowledge about technology. So, administrators need to see "how it works." There is no substitute for hands-on demonstrations with working DL systems. Plan trips to see other DL systems.

4) **Build support among college deans.**

- College deans are also sensitive to the market place, and IHEs (institutions of higher education) must compete for students. Participation in a DL system is a powerful strategy to improve student recruiting.

- External forces may also motivate deans. In Texas, the anticipated financial benefits of the Technology Infrastructure Fund (TIF) is motivating colleges to partner with public schools.

- DL also builds a bridge between universities and public schools and can play a key role as IHEs move toward field-based teacher preparation programs.

PHASE I. STARTING A CONSORTIUM

4. Form a Coalition of Participating School Districts/Higher Education Institutions.

- The obvious purpose of the consortium is to develop and operate a DL system that will address curriculum enrichment, student achievement, and enrollment rates in higher education, to name a few. Refer to Appendix A for a copy of ET-LINC Bylaws (enacted April 5, 1994). Bylaws must address many organizational issues, including officers, meetings, fiscal management of resources, committees, membership requirements, responsibilities, and benefits.

- A word of caution. DL is sometimes promoted as a means of saving money by cutting resources. This is not a recommended motivation for being involved in DL. Rather, the sharing of resources (made possible by DL) should be seen as a means of gaining added value from existing resources.

- The planning task force could become the core management team within the consortium. In the case of ET-LINC, the task force became the core management team, and this has worked very well. In other settings, different approaches to developing consortium management may be appropriate. If so, the core management team should embody the qualities and expertise of the task force.

PHASE I. STARTING A CONSORTIUM

4. Form a Coalition of Participating School Districts/Higher Education Institutions. *continued*

- Bylaws should perpetuate a collaborative management team as the guiding force behind the consortium. Appendix B presents a list of ET-LINC management team personnel.

- Local school boards should approve institutional membership of participating school districts. In most cases, a single person (e.g., vice president of academic affairs) will be the approval agent for higher education institutions.

More and more IHEs have established telecommunication centers. When selecting the IHE partner or partners for the consortium, the presence of existing telecommunication or technology expertise is an obvious plus.

PHASE II. SETTING UP THE DL SYSTEM

1. Develop a Cadre of Local District DL Coordinators

Each consortium district/IHE must have a local DL coordinator. At the school district level, an interested and motivated teacher is frequently a good candidate for DL coordinator. It is not essential that the person initially has a great deal of technical expertise. It is essential that the person is willing and able to learn.

Many institutions of higher education will have a technology division or department. The DL coordinator for the IHE will likely be someone from this group. It is important that this person is service-oriented and committed to working with school district personnel.

A primary responsibility of the DL coordinator at the school district level is to establish a local DL committee. The district DL committee serves several key functions:

- build awareness and commitment to DL
- recruitment of potential DL instructors and students
- provide on-site training capability

Membership of local DL committees should include, school staff, students, and community members.

PHASE II. SETTING UP THE DL SYSTEM

2. Secure Technical Telecommunication Agents.

The consortium needs the technical services and expertise of an experienced telecommunications consultant firm, as well as a technical consultant. Both must understand the "ins" and "outs" of DL systems and telecommunication company operations.

The telecommunication consulting company should have the major responsibility for selecting, purchasing, and installing the DL system hardware at the classroom site, from the external school building wall inward. The telecommunication company also has major responsibility for the configuration and setup of the DL classroom.

The technical consultant provides a "non-vendor" voice (i.e., the consultant is presumably not vested in any particular equipment or system). The consortium management team can look to the technical consultant for a second opinion. Both the telecommunication company and technical consultant should work together in advising the management team during technical preparations and negotiations with the cooperating telecommunication company (or perhaps companies).

It is essential that only one telecommunication company and one technical consultant represent the consortium, in order to attain consistency. The consortium, rather than individual members, should contract with the technical agents. Money used for this technical support and consultation is well spent.

PHASE II. SETTING UP THE DL SYSTEM

3. Complete Technical Preparations with Telecommunication Providers.

The consortium management team (previously the planning task force, in the case of ET-LINC) must learn about the basics of the telecommunication business. These basics include:

- telephone company business structure
- state regulations
- service boundaries
- fee structure
- service lines

All telecommunication providers hopefully realize a profit, but the use of profits differs substantially among providers. Companies owned by share-holders (e.g. Bell System or GTE) must realize sufficient profit to pay acceptable returns on the investment of share-holders. On the other hand, profits realized by telecommunication providers organized as telephone cooperatives must be paid back to the members of the telephone cooperative, either as direct reimbursements or capital re-investments in the cooperative.

PHASE II. SETTING UP THE DL SYSTEM

3. Complete Technical Preparations with Telecommunication Providers. *continued*

Each consortium member who receives an on-site DL hookup should contract individually with the telecommunication provider for delivery of the line service. The DL service contract should specify responsibilities of both parties, time schedules, and fees. See Appendix C for a sample contract used in the Creating Connections project. Appendix C also includes a framework for costs incurred by a telephone company.

There are major differences between DL systems using two-way compressed video (transmitted via a dedicated T1 telephone line) and two-way full-motion video (transmitted via DS3 fiber optic line).

- Fiber optic is not generally available, and installation requires extensive financial investment by the telecommunication provider.
- Fiber optic transmission is more reliable; "down time" is greatly reduced.

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PHASE II. SETTING UP THE DL SYSTEM

3. Complete Technical Preparations with Telecommunication Providers. *continued*

- Fiber optic transmission provides full-motion video, without the distractions of "jerky" video or delays between video and audio transmissions.

- Fiber optic is most likely the technology of the not-too-distant future.

The type of DL system developed, compressed vs. full-motion video, will likely depend on the telecommunication provider(s). The Creating Connections project strongly recommends installation of a full-motion system, using fiber optic technology, if at all possible. Development of a compressed video system (using T1 transmission) will restrict future capabilities and likely result in inefficient use of resources. More detailed information in Appendix D compares relative bandwidths of transmission lines.

Decision makers should visit working demonstrations of both types of DL systems (compressed and full-motion) before selecting one system over the other. Once again, remember that vender descriptions of technology frequently overstate actual performance. Again, believe it when you see it, not before.

PHASE II. SETTING UP THE DL SYSTEM

4. Bring Member DL Sites Online.

Identify/select the DL classroom and develop plans for structural modifications.

- Selection of the DL classroom is a major philosophical statement. Selection should communicate at least two themes: 1) DL is a priority in our school, and 2) DL is for all students and community members, not just a few.

- When selecting the DL classroom, note that the room must be accessible after the usual school day. Also, consider lighting, ceiling, height, traffic patterns, etc. (see Appendix E for DL classroom criteria).

- Structural modification to the DL classroom requires accommodation of both technical and educational needs. The technical agents will be engineers who do not necessarily understand education. In most cases, educational needs should be given preference to technical needs. Stand firm and insist that educator needs are met. Appendix F contains a suggested DL classroom configuration, suggested modification for students with disabilities, and a framework for costs incurred by local districts.

- All DL classrooms within the consortium do not have to look the same; the last room installed will likely be different from the first, because of experience gained.

PHASE II. SETTING UP THE DL SYSTEM

4. Bring Member DL Sites Online. *continued*

- Timely identification of the DL classroom is of major importance to the telecommunication providers; once the room is identified, the providers know the precise destination for line installation.

Purchase and install DL hardware in the DL classroom.

- The telecommunication company should complete this "turnkey" service as part of contractual agreements.

Install telecommunication hookups.

- Installation of the telecommunication transmission line is the contracted responsibility of the telecommunication provider; installation of the DL system within the classroom is the responsibility of the telecommunication company.

Operate and debug the system.

- It may not work properly at first, but everything is fixable. Pay special attention to the quality of audio transmission. Users can make do with video problems, but audio problems are nearly fatal to the instructional process. System debug is part of the telecommunication company's responsibility; set up a maintenance agreement to deal with future technical problems.

PHASE II. SETTING UP THE DL SYSTEM

5. Conduct First-Year Public Relations.

Public relations and dissemination are frequently overlooked, especially by educators. One should give public relations a high priority at all times, but especially in the beginning. The public relations effort should start yesterday.

Build awareness and understanding with students, faculty, and community during the lead-up months before the system becomes operational.

- Form a student committee representing consortium members. Conduct training/awareness with this committee; the student committee should help develop a student DL contract and design.
- Make use of local students and teachers to conduct orientation training and information sessions about the upcoming DL system.
- Arrange visitations to working DL systems for hands-on demonstration for students, faculty, and community members (including local education and business leaders).
- Once the DL classroom is operational, or even semi-operational, keep the room open and accessible to consumers. Remember that the video equipment is a major resource, even without the DL capability.

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PHASE II. SETTING UP THE DL SYSTEM

5. Conduct First-Year Public Relations. ***continued***

- Target community groups (e.g., Lions, Rotary, Chamber of Commerce, fire department, scouts, historical groups, etc.) for information/demonstration sessions.

- Class reunions provide a great opportunity for public relations. Provide a hands-on demonstration of the DL system for returning alumni. Former students will be enthusiastic and will "spread the word" in the adult community.

- Make use of public relation material. Disseminate brochures and flyers freely.

PHASE III . PREPARING FOR DL INSTRUCTION

1. Plan the DL Course Offerings.

Start at the local level first; each member of the consortium must study their own needs and priorities. Include at least students, teachers, counselors, and principals in this process. Courses will likely include both those offered by the college and those offered by public schools.

It is best to have some kind of structured listing of possible courses to use during this planning process. It is also helpful to reference courses to state curricula or other priority guidelines (in Texas, Texas Essential Knowledge and Skills (TEKS) for example). See Appendix G for a sample listing of courses used by ET-LINC.

Conduct a schedule planning session for all consortium members. There will likely be lively interchange during this planning activity, as members trade and barter course offerings among themselves. A single planning session should yield a fairly finalized semester schedule. Appendix G also contains a sample planning worksheet that may be used in the planning process.

PHASE III . PREPARING FOR DL INSTRUCTION

1. Plan the DL Course Offerings. *continued*

Course scheduling raises many issues. Among these are:

- Whose calendar and class schedule does DL follow? ...starting/ending the course, class hours, days off; calendars belong to specific communities, and these may be very important and difficult to resolve; individual communities may be competitive.
- How will you coordinate fire drills?
- How many students will there be per class? ...this can be a big issue, it's hard to get equal numbers of students per class at each site; class size affects, costs and fees; one solution may be to work with proportional rates.
- Will you offer before/after school hours courses? What about the bus schedule?
- Who owns the student? Who counts the student in ADA? What is involved in student drop-out?
- How do you handle state reporting (in Texas, the PEIMS system) and student accounting? ...districts are only sharing teachers, keep the students home-based and you avoid the PEIMS issue.

PHASE III . PREPARING FOR DL INSTRUCTION

1. Plan the DL Course Offerings. *continued*

- How do DL course grades affect class ranking and selection for valedictorian? This is totally a local member issue and does not affect decisions at the consortium level.

- What conditions/factors govern the earning of dual credit (both high school and college)? How should costs be shared?

The solution to the above issues adopted in Creating Connections by ET-LINC has been that the sending site governs the above scheduling considerations. Students at receiving sites must fit themselves to the sending-site. Course descriptions include scheduling characteristics unique to the sending site. Such issues should be delineated in the student contract for each DL course.

Both students and teachers initially see scheduling as a major problem, but difficulties quickly resolve themselves. Sending teachers just need to understand that some remote students might leave temporarily for a fire drill, and some receiving students may have to work around bus schedules to get home.

PHASE III . PREPARING FOR DL INSTRUCTION

1. Plan the DL Course Offerings. *continued*

Receiving sites should tell the sending site teacher of any upcoming schedule disruptions in their site (e.g. field trips or testing). Block scheduling presents special challenges; it is workable but may require special effort and flexibility.

The sending site assumes a serious commitment to receiving sites. If the French teacher leaves unexpectedly, the sending site has to find a replacement or drop the course from the whole network.

- The only fees for DL courses to date have been those charged by the IHE; note that DL makes the higher education market place more competitive, since students will move toward selection of courses offered by the most cost effective institution of higher education.

With respect to student accounting, Creating Connections and ET-LINC declared that the public school student always belongs to his/her school of residence. All student non-DL course matters (e.g., ADA, TAAS, etc.) belong to his/her local school. DL course grading belongs to the sending site teacher.

PHASE III . PREPARING FOR DL INSTRUCTION

1. Plan the DL Course Offerings. *continued*

The policy decisions by ET-LINC have worked very well during the development and demonstration phase of Creating Connections (2 years). At this point, consortium management expects existing policies to work well in the foreseeable future. The successful collaboration within the ET-LINC management team has contributed significantly to the success of ET-LINC DL policies.

PHASE III . PREPARING FOR DL INSTRUCTION

2. Identify and Train DL Teachers.

Ideally, the best teachers should be involved in delivery of DL instruction.

Teaching DL courses requires more preparation and more work. But, DL teaching soon becomes very rewarding and motivating, given proper training and support.

It will be much easier for the first-time DL teacher to teach to remote site students only, without the presence of real students at the sending site. This permits the new DL teacher to focus more easily on the mechanics of working with a DL system, without having to deal simultaneously with on-site students.

The first pool of DL teachers may be volunteers and will likely come from the cadre of local site DL coordinators. Some DL teachers report that the transition to DL was "no big deal." Others move more cautiously. Either way, training and support are critical.

Training content not only includes the mechanics of operating the DL system, but also procedures for delivering instruction via a DL system. See pages 51-53 of the ET-LINC Educational Coordination Summary Report prepared by L.A. Lloyd, Cathey, Hutton & Associates, Inc., 1996, reproduced in Appendix H, for recommended training content.

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PHASE III . PREPARING FOR DL INSTRUCTION

2. Identify and Train DL Teachers. *continued*

Each DL site should have a designated DL trainer who has received extensive training. ET-LINC site trainers attended the Teletraining Institute located in Stillwater, Oklahoma. Graduate credit is available through Oklahoma State University.

Instructional certification in DL is strongly recommended for at least one person in each DL site.

Training involves several issues. At this point, Creating Connections and ET-LINC are in the process of developing recommended policies for these issues.

- Who will pay for cost of training, session cost, and travel? Unless grant monies are available, all training costs must be funded by each school district.

- What levels of training are desired? Who specifies the training requirements? Should this be a consortium or local decision? The consortium should make broad recommendations, but each district is ultimately responsible for the level of training of its own personnel. The district offering any given DL course should describe the expertise of the instructor; consumers can then accept or reject as desired.

PHASE III . PREPARING FOR DL INSTRUCTION

2. Identify and Train DL Teachers. *continued*

- Who receives training? What qualifications must trainees possess? Should substitutes be included in training? The local superintendent (or designee) should determine which staff members will receive training. A discussion of desired qualifications appears in Appendix I.

- Should training be integrated into existing staff development systems? Existing staff development should make local use of resources in the DL classroom. DL training should be integrated in consultation and coordination with the locally designated DL trainer.

- How should the effectiveness of training be evaluated? Will there be proficiency standards? Training effectiveness should be evaluated in terms of three areas: 1) mastery of basic competence, 2) on-going delivery of instruction, and 3) impact on student learning. Work is in progress toward development of a DL teacher performance appraisal system.

PHASE III . PREPARING FOR DL INSTRUCTION

2. Identify and Train DL Teachers. *continued*

A DL teacher contract is strongly recommended. University courseware can easily create conflict because of differences between local community norms and the norms of the university community. Selected words and phrasing may be acceptable in the university classroom, but such may not be appropriate in school district classrooms. Topical content of some university courses (e.g., consideration of abortion or homosexuality) may also not be acceptable in remote sites. University DL teachers must accommodate such differences in value systems.

PHASE III . PREPARING FOR DL INSTRUCTION

3. Involve the Community.

Remember to keep community members involved. Each local DL committee should include at least one parent. Members of other groups targeted in community awareness should also be involved.

The local on-site DL committee should give high priority to community involvement. Adults should become the strongest advocates for the DL system. One way to build community support is to conduct parent orientation and hands-on sessions. Potential issues include:

- How can community leaders be brought effectively into DL planning? Interface with existing community leadership groups (e.g. the Chamber of Commerce, city council, regional governance groups, etc.) is recommended. Community groups interface will be critical for operation of adult education programming.

Who has priority access to the DL system? Who gets to use the system and when? School district students must have first-priority access. While public school students have priority to the system, what is the priority for the PTA or the fire department? How will these scheduling decisions be made? Closely related to this priority are service priorities attached to any external funding grants. Within ET-LINC, a first-come, first-served rule has worked well in the short-term (i.e., after first-priority for district students).

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PHASE IV. OPERATE & MANAGE THE DL SYSTEM

1. Operating DL Classrooms.

Management of student behavior in DL classrooms.

- A student contract is strongly recommended. A copy of the ET-LINC student contract and release form appears in Appendix J. Parents should also agree to the content of the student contract and release form.

- Part of the student contract must address acceptable use of the Internet. While explicit sexual material may come to mind immediately, acceptable use must also address participation in "chat" rooms (if permitted, the kind of conversation allowed must be considered) and standards for academic integrity of information accessed (some material on the Internet is simply not truthful).

- Also, See pages 31-33 of the ET-LINC Educational Coordination summary Report prepared by L.A. Lloyd, Cathey, Hutton & Associates, Inc., 1996, reproduced in Appendix K, for a discussion of classroom behavior and disciplinary policies.

DL classroom discipline is generally not a problem. The fact that everything may be videotaped and/or visible to remote sites usually minimizes inappropriate behavior.

PHASE IV. OPERATE & MANAGE THE DL SYSTEM

1. Operating DL Classrooms. *continued*

The DL classroom, when attended by school district students, must be supervised or monitored by a facilitator who is a responsible adult. In Creating Connections, ET-LINC's policy is that the DL classroom facilitator must be a full-time, adult employee of the receiving district. There is no need for the facilitator to have a professional credential.

Management of Learning Materials.

- For non-university courses, the sending site provides texts and learning materials (usually on a loan basis). For university courses, students purchase required texts and materials.

- The transfer of completed class assignments between the remote sites and the DL teacher is a difficult problem. There is no really good way to transfer these materials in a timely manner (Creating Connections tried student couriers, with only moderate success). The best solution is probably going to be to share all materials of this sort via the Internet.

PHASE IV. OPERATE & MANAGE THE DL SYSTEM

2. Managing the DL System.

The ET-LINC management team has managed the Creating Connections DL system successfully to date. However, current thinking is moving toward possibly establishing a full-time system coordinator position (because there are so many procedural details). The DL system coordinator would work in collaboration with the consortium management team.

At this time, ET-LINC has not developed policies or further recommendations for system management. Some of the issues involved in system management include:

- What support personnel, (e.g. technology maintenance, scheduling, etc.) will be needed to manage the system? Who will recruit, supervise, and pay for these people? The need for support people appears to be more critical when the consortium includes multiple IHEs. If there is only one member university, the DL person(s) at that institution may coordinate and perform support tasks.

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PHASE IV. OPERATE & MANAGE THE DL SYSTEM

2. Managing the DL System. *continued*

- A designated DL coordinator at each site is a must. The DL task functions should be part of the person's job responsibility (similar to an athletic director, baseball coach, etc.) It is better if the DL site coordinator is part of the district's management team. Appendix L contains a job description for the DL site coordinator.

PHASE IV. OPERATE & MANAGE THE DL SYSTEM

3. Managing DL Staff.

At this time, ET-LINC is in the process of developing policies and recommendations for management of DL staff. Some of the issues that need to be considered:

- At what point should consortium institutions begin to reduce time given to the core team members for involvement in the DL system? How much maintenance-level in-kind contribution of core team members is needed?

- Does money from course fees flow through to the teacher or the sending site?

- Fees for Creating Connections courses to date have been charged only for courses offered by the university. There have been no fees for courses offered among the public school districts.

- Who pays the DL teacher? What additional compensation will be given to DL teachers? Will teachers teach concurrently? What is the payment schedule when teachers teach concurrently? What preparation time should teachers have? Who will be the teacher of record? What substitutes will be used?

PHASE IV. OPERATE & MANAGE THE DL SYSTEM

3. Managing DL Staff. *continued*

These have not been major issues to date in ET-LINC's Creating Connections project. The policy of the teacher belonging to the sending site and the students belonging to the receiving site has provided acceptable answers. In effect, the sending site takes care of its own teacher issues.

PHASE IV. OPERATE & MANAGE THE DL SYSTEM

4. Managing DL Equipment.

Each local site owns and maintains the on-site DL equipment. Maintenance agreements are recommended strongly.

Each local site should have a local staff person who is the designated person to contact when technical difficulties occur. This local person should be able to trouble-shoot basic problems and should know whom to call to resolve the more difficult problems.

For equipment not covered by a local ISD or IHE, an equipment use contract, which specifies personnel approved to use the equipment, is recommended.

PHASE V. MOVING TOWARD INSTITUTIONALIZATION

The future of the DL system and of the consortium are intertwined. The Creating Connections DL system operated by ET-LINC has a solid foothold, but will ultimately wither without integration of the DL system and the consortium into member institutions.

1. The first priority should be to institutionalize the management of the consortium. Member institutions must come to see themselves as part of the larger, collaborative community created by the consortium. Creation of a DL system coordinator (or perhaps director), supported financially by members, may be the first step.

See pages 18-20 of the ET-LINC Educational Coordination Summary Report prepared by L.A. Lloyd, Cathey, Hutton & Associates, Inc., 1996, reproduced in Appendix M, for recommended attributes of a system director.

2. A second priority, or at least a very important priority, should be continued search for external funding. The DL system is a major asset of the consortium and should enhance the opportunity for external funding.

PHASE V. MOVING TOWARD INSTITUTIONALIZATION

3. The consortium management team must begin to focus more on DL curriculum, community programming, and advances in relevant technology. Future evolution of the Internet and interactive TV appear especially noteworthy.

4. Operational areas that should be institutionalized rather soon include DL training, scheduling of DL courses, and performance evaluation of DL teachers.

5. The institutionalization process must recognize that the consortium, as a whole, must have overall approval authority. If an ISD or IHEs participation is through DL consortium, then the consortium must be able to supervise and monitor local use of DL systems, at least in a broad sense. Abuse can occur, and the consortium must be the overseeing agent. Appendix N presents rules and regulations adopted by ET-LINC for local use of the DL system.

6. Any DL system or consortium will be a dynamic, evolving enterprise. As the consortium network grows and expands, new issues, policies, etc. will constantly surface. Participants must adopt a flexible and energetic mind set.

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APPENDIX A

ET-LINC BYLAWS

BYLAWS

East Texas-Learning Interactive Network Consortium
(ET-LINC)

ARTICLE I
PURPOSE

The purpose of ET-LINC will be to create opportunities for students to access curriculum beyond traditional courses currently offered. To increase high school students' access to the recommended high school program and to increase the number of students in small schools who graduate with advanced seals. To increase student achievement by removing the parameters set by the four walls of the traditional classroom, by expanding beyond the seven period school day and nine month school year, and by moving beyond the twelve years of education. To enrich curriculum through the use of cutting edge telecommunications technology for minority and economically disadvantaged students. To decrease the drop-out rate of students by enabling them to have access to workplace training, technical preparation, and curriculum improvements that provide a more relevant educational program. To increase the number of students passing TAAS at all grades. To create environments in which students and other community stake-holders can link, expand, and enrich their learning experiences beyond the traditional setting and limitations of rural schools and communities.

ARTICLE II
OFFICES

Section 1.01: Location: The principal office of the Consortium shall be located at such places as the Board of Directors shall from time to time designate, in or outside the east Texas area. The Consortium may maintain additional offices at such other places as the Board of Directors may designate. The Consortium shall have and shall continuously maintain in Texas a registered office at such place as may be designated by the Board of Directors.

ARTICLE III
MEMBERS

The Consortium shall have members whose participation shall be determined by the Board of Directors. Membership shall be granted to those entities designated as Full Members, Associate Members, Affiliate Members or Individual Members. Full membership shall be granted to those schools, colleges/universities, hospitals, educational service centers and others who are full subscribers or have made a

commitment to become a full subscriber to the network and pay annual dues to the Consortium in the amount of $100. Associate membership shall be granted to those schools, colleges/universities, hospitals, educational service centers and other entities who are otherwise eligible to subscribe to the network but have not and who pay annual dues to the Consortium in the amount of $50. Affiliate membership is available to businesses and members of the private sector who are not subscribers to the network, but have interests compatible with and supportive of the goals of the Consortium. Annual membership dues for Affiliate members shall be $100. Individual membership is available to persons who are interested in the goals of the Consortium, and wish to hold individual membership with annual dues of $25. Memberships may also be granted under in-kind arrangements, as defined and determined by the Board of Directors.

The Founding/Charter members of the Consortium consist of designated representatives of E-Systems, Inc. (Gary Rasor), Peoples Communications and Peoples Telephone Cooperative, Inc. (Leroy Kelly), Greenville ISD, (Linda Porter), Gladewater County Line ISD (Peggy Meathenia), Allen ISD (Carol Smith), East Texas State University (Jerry Horn) and Boles ISD (Richard Gibbs). The Founding/Charter members will serve as officers of the Consortium until an election by the membership can be conducted.

ARTICLE IV
BOARD OF DIRECTORS

Section 3.01 Power of the Board. The affairs of the Consortium shall be managed by the Board of Directors.

Section 3.02 Number of Directors. The number of directors of the Consortium shall consist of the officially recognized representative of all Full Members. The number of directors may be set from time to time by amendment to the Bylaws but shall never be less than three after the network becomes operational.

Section 3.03 Term of Directors. The director shall serve on the board as long as the institution/agency they represent continues in be eligible for membership and is current in the payment of annual dues to the Consortium.

Section 3.04 Annual Meeting. One meeting each year of the Board of Directors shall be designated as the Annual Meeting. Notice of this meeting will be mailed to all members of Consortium. The notice shall include the time, date, and location of the meeting. This notice shall be mailed at least 15 days before the time set for the Annual Meeting. (Other meetings of the Board shall be determined by the Board as a whole or on written request by at least three Board members. Such requests shall be directed to the President of the Consortium.) All meetings of the Board of Directors shall be deemed open to all memberships categories, but only members of the Board shall be allowed to vote. Roberts Rules of Order shall be used in the conduct of all meetings.

Section 3.05 Notice. Whenever notice is required to be given under any provision of these Bylaws, it may be given by written notice delivered personally or sent by mail, or by telegram, express delivery service, or electronic facsimile transmission to each director at his or her address as shown by the records of the Consortium. If mailed, such notice shall be deemed to be delivered three (3) days after being deposited in the United States mail in a sealed envelope so addressed, with postage thereon prepaid. If notice be given by telegram or other commercial message delivery service, such notice shall be deemed to be delivered when given, so addressed, to the telegraph or other commercial message delivery company. Notice given electronically shall be deemed delivered when transmitted by electronic transmission to the intended recipient as shown in the records of the Consortium.

Section 3.06 Waiver of Notice. Any director may waive notice of any meeting, either before or after the time notice would have been required. A director's attendance at any meeting shall constitute waiver of notice of such meeting, excepting such attendance at a meeting by the director for the purpose of objecting to the transaction of business because the meeting is not lawfully called or convened. Except as specifically required by the Articles, or special or by these Bylaws, neither the business to be transacted at, not the purpose of any regular meeting of the Board of Directors need be specified in the notice, or waiver of notice, of such meeting.

Section 3.07 Informal Action By Directors: Meetings by Conference Telephone. Any action required or permitted to be taken by the Board may be taken without a meeting, with consent in writing, setting forth the action to be taken, shall be signed by all directors authorizing the action. Such consent shall have the same force and effect as a unanimous vote. The signed documents setting forth such consent by all directors shall be filed with the minutes of the proceedings of the Board.

Any or all directors may participate in a meeting of the Board or a committee of the Board by means of conference telephone or video conference system, or by any means of communications by which all persons participating are able to see and/or hear one-another, and such participation shall constitute presence in person at the meeting.

Section 3.08 Compensation of the Directors. The Consortium shall not pay any compensation to directors for services rendered to the Consortium, except that directors may be reimbursed for expenses incurred in the performance of their duties to the Consortium. A person serving as a director may be compensated for services provided to the Consortium in any other capacity.

Section 3.09 Honorary Board of Directors. (Advisory Committees). The Board may elect or appoint any person to act in an advisory capacity to the Consortium, or in an honorary capacity with respect to the Consortium, and may create such honorary boards of advisory groups and appoint to them such persons as it deems appropriate.

Persons being in such advisory or honorary capacities shall not exercise any of the powers granted to the Board in these Bylaws.

ARTICLE V
COMMITTEES

Section 4.01 Executive Committee. The Board of Directors, by resolution adopted by a majority of the directors in office, may designate and appoint an executive committee to consist of not less than two directors. The Executive committee shall, to the extent provided in such resolution, have and exercise all the powers of the Board of Directors during the intervals between the meetings of the Board, and shall fix its own rules of procedure. Such committee shall keep a record of its proceedings, which shall from time to time be reported to the full Board. The designation and appointment of any such committee and the delegation thereto of authority shall not operate to relieve the Board of Directors, or any individual director, of any responsibility imposed upon it or him/her by law.

Section 4.02 Committees Other Than Executive Committee. The Board may designate and appoint one or more committees, each of which shall include at least one director, which committees shall have the duties assigned to them by the Board of the designation and appointment of any such committee and the delegation thereto of authority shall not operate to relieve the Board of Directors, or any individual director, of any responsibility imposed upon it or him/her by law.

ARTICLES VI
OFFICERS, AGENTS AND EMPLOYEES

Section 5.01 Officers. The officers of the Consortium shall be a President, a Vice-President, a Secretary and a Treasurer and such other officers and assistant officers as may be determined by the Board. Any two or more offices may be held by the same person except that the offices of President and Secretary shall be held by different people.

Section 5.02 Election and Term of Office. The officers shall be elected from the total membership at each annual meeting of the Board. If the election of officers shall not be held at such meeting, such election shall be held as soon as thereafter as conveniently may be. Each person so elected shall hold office for the term for which he or she is elected, not to exceed two years, and until a successor has been elected and qualified. The election or appointment of an officer shall not of itself create contract rights.

Section 5.03 Resignation. Any officer may resign at any time by giving written notice to the Board or to the President or Secretary of the Consortium. Any such resignation shall take effect at the time of receipt or such later time as therein specified and unless

otherwise specified therein no acceptance of such resignation shall be necessary to make it effective.

Section 5.04 Removal. Any officer may be removed by the Board of Directors, whenever in its judgment the best interest of the Consortium will be served thereby; provided, however, that removal of an officer shall be without prejudice to his contract rights, if any. Non-attendance at more than two consecutive meetings of the board or a committee will constitute grounds for removal.

Section 5.05 Vacancies. A vacancy in any office may be filled for the unexpired portion of the term by the Board at any meeting.

Section 5.06 Powers and Duties of Officers. Subject to the control of the Board of Directors, all officers as between themselves and the Consortium shall have such authority and perform such duties in the management of the property and affairs of the Consortium as may be provided in these Bylaws or by resolution of the Board not inconsistent with the Bylaws and, to the extent not so provided, as generally pertain to their respective offices.

A. President. The President shall be the Chief Excecutive Officer of the Consortium. The President shall preside at all meetings of the Board of Directors and, subject to the supervision of the Board of Directors, shall perform all duties customary to that office and shall supervise and control all of the affairs of the consortium in accordance with such policies and directives as may be established by the Board of Directors. The President may delegate authority and responsibility but shall remain fully accountable to the Board.

B. Vice President. In the absence of the President, or in the event of his or her inability or refusal to act, the Vice President shall perform the duties of the President, and, when so acting, shall have all the powers of and be subject to all the restrictions upon the President. The Vice President shall perform such duties and have such other powers as the Board of Directors may from time to time prescribe by standing or special resolution, or as the President may from time to time provide, subject to the supervision of the Board of Directors.

C. Secretary. The Secretary shall be responsible for the keeping of an accurate record of the proceedings of all meetings of the Board of Directors, shall see to it that all notices required by these Bylaws or by law are given, and, in general shall perform all duties customary to the office of Secretary.

D. Treasurer. The Treasurer shall have the custody of, and be responsible for, all funds of the Consortium. Whenever required by the Board of Directors, the Treasurer shall render a statement of accounts. He shall at all reasonable times exhibit the books and account to any Director of the Consortium.

Section 5.07 Compensation of the Officers. The Consortium shall not pay any compensation to the officers for services rendered to the Consortium, except that officers may be reimbursed for expenses incurred in the performance of their duties to the Consortium. A person serving as an officer may be compensated for services provided to the Consortium in any other capacity.

ARTICLE VII
MISCELLANEOUS

Section 6.01 Fiscal Year. (September 1 - August 31) The fiscal year of the Consortium shall be the school year unless otherwise determined by the Board of Directors.

Section 6.02 Contracts and Other Documents. The Board may, except as otherwise required by law, or these Bylaws, authorize any officer or agent of the Consortium to enter into any contract or execute and deliver any instrument or document on behalf of the Consortium. Such authority may be general or confined to specific instances. The Board may delegate this power to the President on such terms as it prescribes.

Section 6.03 Checks. All checks shall be signed by such officer or agent of the Consortium and in such a manner as shall be from time to time determined by the Board. The Board may delegate this power to the President, on such terms as it prescribes. In the absence of such determination, such instruments shall be signed by the Treasurer.

Section 6.04 Books and Records. The Consortium shall keep at the address of the Secretary or any other place determined by the Board of Directors, (1) correct and complete books and records of account, and (2) minutes of the proceedings of the Board of Directors and any committee having any authority of the Board.

Section 6.05 Material and Financial Assets. The disposition of assets acquired by the consortium will be determined by a majority vote of the Board of Directors in accordance with the goals and mission of the organization. Assets of the consortium may include moneys obtained from membership dues or other financial contributions; property or other tangible assets given to the Consortium as an in kind contribution; and any other item or service offered to the Consortium as a donation or in kind membership arrangement. In the event of the dissolution of the East Texas - Learning Interactive Network Consortium (ET-LINC), the disposal of the assets controlled by the Consortium at the time of such dissolution shall be determined by a joint decision of the membership and the directors, with final approval of the asset distribution to be determined by a majority vote of the Board of Directors.

The Bylaws of the Consortium may be adopted, amended, or repealed by the Board of Directors.

We certify that the for-going Bylaws of the East Texas - Learning Interactive Network Consortium (ET-Linc) as were approved and adopted for the organization by its Founding/Charter members by unanimous consent on April 5, 1994 and that they are currently in effect.

Gary Raso (E-Systems, Inc.)

LeRoy Kelly (Peoples Communications, Inc.)

Linda Porter (Greenville ISD)

Peggy Meathenia (Gladewater ISD)

Carol Smith (Allen ISD)

Jerry Horn (East Texas State University)

Richard Gibbs (Boles ISD)

APPENDIX B

ET-LINC MANAGEMENT TEAM

Peggy S. Meathenia
Project Director - East Texas School-to-Work
Gladewater ISD

Rita Dobbs
Project Director - Creating Connections
Gladewater ISD

Mary Hendrix
Director - N.E. Texas Education Partnership
TAMU-Commerce

Linda Porter
Technology Coordinator
Greenville ISD

Bob Davis
Technology Coordinator
Harmony ISD

Lisa Burchfield
Business Manager
Yantis ISD

Helen McClain
Technology Coordinator
Gilmer ISD

Max Newton
Manager
Peoples Telephone Cooperative, Inc.

Bob Hackett
Manager
ETEX Telephone Cooperative

APPENDIX C

SAMPLE TELECOMMUNICATIONS CONTRACT

TELECOMMUNICATIONS COST FRAMEWORK

INTERACTIVE EDUCATIONAL TELEVISION AGREEMENT

This Agreement is entered into as of the ___ day of _____, 1995, between Peoples Communications, Inc. (hereinafter referred to as "PCI"), and ____ Independent School District (herinafter referred to as "ISD").

W I T N E S S E T H :

WHEREAS, ISD desires to establish an interactive two-way educational television network for instruction through simultaneous transmission of a master teacher's lesson from a host classroom or studio to receiver site classrooms in distant locations coordinated by ET-Linc (hereinafter referred to as the "NETWORK") insofar as it is used by the ISD under this agreement; further the Network is limited to members of E T-Linc who are directly connected to the E T-Linc tandem switch in Quitman, Texas, and such network would be provided through communications facilities and services of fiber optic cable of PCI.

WHEREAS, PCI, a subsidiary of Peoples Telephone Cooperative, a telephone public utility operating under certificates of convenience and necessity as issued to it by the State Corporation of the State of Texas, is willing to provide or arrange to provide the facilities and services of the NETWORK in accordance with this Agreement to the ISD; and

WHEREAS, the network shall be operated under the auspices of the East Texas Learning Interactive Network Consortium, referred to herein as ("E T-Linc") for the furtherance of educational opportunity in the ISD.

NOW, THEREFORE, in consideration of the faithful performance by each party of the mutual covenants and agreements hereinafter set forth, it is mutually undertaken and agreed as follows:

A. SPECIAL TERMS

1. "Network," as used herein, shall mean the interactive educational network as used by the ISD under this agreement. Further the network is limited to members of E T-Linc who are directly connected to the E T-Linc tandem switch in Quitman, Texas.
2. "Turnnup date" means the date on which the network is turned over to the ISD for its use.

1. PCI UNDERTAKINGS

PCI shall:

1.1 Engineer, install and provide the NETWORK to the ISD in the educational configuration desired, provided that PCI's obligation shall be limited to providing high capacity digital access service to the extent of 3 DS-3's. In addition, PCI shall provide one video encoder, and three video decoders.

1.2. Carry out the installation and testing of the facilities to the ISD classroom making up the configuration of the NETWORK.

1.3. Construct, install and test on a schedule to effect a turnup date on December 1, 1995.

1.4. Interconnect its equipment and facilities with any E T-Linc or ISD owned or furnished equipment, or facilities, in accordance with established technical criteria for assuring continuity of service and to meet the specifications of service.

1.5. Maintain, service and care for the fiber optic cables, fiber optic terminals, and the codecs used in the NETWORK.

1.6. Provide installation maintenance and administration of the E T-Linc Tandem switch in Quitman, Texas.

2. THE ISD'S UNDERTAKING

The ISD shall:

2.1. Be responsible for the purchase consultation, installation, and maintenance of classroom video equipment to be located at each Interlocal classroom site making up the configuration of the NETWORK.

2.2. Obtain from E T-Linc for delivery to PCI the tandem switching to be used in the Network and any other E T-Linc cooperation necessary to establish the Network.

2.3. Provide environmentally controlled floor spaces and commercial air conditioning and power for the fiber optic terminals and codecs.

ATTACHMENT TO THE

INTERACTIVE EDUCATIONAL TELEVISION AGREEMENT

By the signatures below, both parties agree that this Attachment become a part of the Interactive Educational Television Agreement, bound by all provisions contained therein.

All additional bandwidth, singled out of the provisioned bandwidth for each school, shall be provided at no additional charge by Peoples Communication, Inc. Any additional equipment deemed necessary at the site for the provisioning of aforementioned bandwidth shall be the responsibility of the individual school and shall not become an encumbrance to Peoples Communication, Inc.

IN WITNESS WHEREOF, the parties evidenced below have executed this Attachment as of the _____ day of _____, 19 ____.

INDEPENDENT SCHOOL DISTRICT

BY _____

_____
Printed Name

_____
Title

ATTEST:

_____

_____
Printed Name

PEOPLES COMMUNICATION, INC.

BY _____

_____
Printed Name

_____
Title

ATTEST:

_____

_____
Printed Name

TELECOMMUNICATIONS COST FRAMEWORK

Framework for a Model Network from a

Telephone Company's Point of View

The outline below provides a framework for identifying costs from the viewpoint of a telephone company. Charging an annual cost to the school district is easiest for educators. Note that software for switching equipment is a major decision point.

NETWORK COSTS:

- CONNECTIONS
- FIBER OPTIC TERMINALS (SIGNAL BOOSTERS)

END USER CONNECTIONS:

- CODEC COSTS
- FIBER OPTIC TERMINALS (E.U. CONNECTIONS)

SWITCHING EQUIPMENT

- SOFTWARE
- VIDEO SWITCHING EQUIPMENT
- PERIPHERAL DEVICES (P.C., PRINTERS, ETC.)

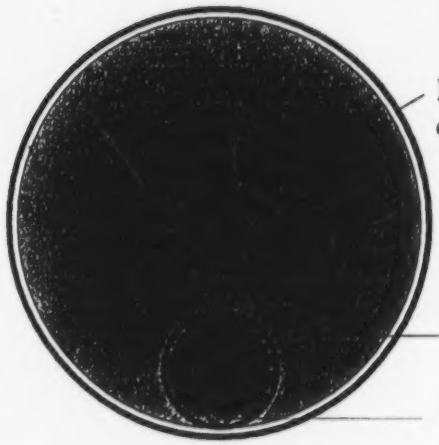
INDIRECT/ONGOING COSTS:

- CENTRAL OFFICE COORDINATION
- BUSINESS OFFICE COORDINATION
- ENGINEERING
- FIBER LEASE
- FLOOR SPACE & POWER COSTS

APPENDIX D

COMPARISON OF RELATIVE BANDWIDTHS

Comparative Bandwidths for Education:
what size does the "pipe" need to be?



DS3 circuit: runs 45 MB/s; twenty-eight T1 lines can fit into a DS3 circuit

T1 circuit: runs at 1.54 MB/s;
there are twenty-four 56 Kb/s lines in a T1

56 Kb/s line: used for voice or data circuit
(one or the other)

1. 56 KB (Kilobit)

A 56 KB (Kilobit) line is often ordered by schools for data and audio (telephone) traffic. Having a dedicated line for computer access greatly increases the speed of data sent and received because of the greater capacity of the line, when compared to a regular phone line. Dial up systems (using a modem) tend to be slower, but the speed of the network also depends on other components in the network. Interactive computer networks will only be as fast as the slowest element in the system: for example, if a computer is equipped with a direct 56K connection, but has a low-speed modem or inadequate processor, the increased network capacity will not have a positive effect on the network speed. The direct connect does improve overall quality of any network, regardless of types of equipment or usage, because the dedicated line provides a clean signal, with less chance of interference (dirt) on the line.

Video applications on 56 KB systems are rather limited for a number of reasons. The low bandwidth only permits a relatively poor quality video signal over distance. Video networks using 56 KB "dial-up" services must be able to access a switch, usually located at a phone company central office (CO), hence the term "switched 56 " video is sometimes mentioned. The video quality is rough, running at between 8 and 12 fps (frames per second). Full motion video runs at 30+ fps. Currently, Internet access is probably the most common reason for a school ordering a 56 KB line.

continued ...

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Comparative Bandwidths for Education: what size does the "pipe" need to be?

2. T1 (1.54 MB/s)

A T1 connection is usually required by schools with heavy data traffic. A dedicated T1 line can improve the speed and quality of a network from campus to campus. Some larger school districts own a data server and act as the local hub for information relating to administrative and records management. The local data server can be connected to remote sites like a university, a district office, or some other distant resource, using a T1 line. This is how some districts share data and multimedia resources. Districts can also use T1 lines to access Internet servers, both for the increased capacity and because the server is remote.

Video interactive networks can be initiated over T1 lines. The video quality depends upon two main factors: the rate of transmission and the quality of the connection. If a two-way connection is dedicated, using the entire T1 signal (and the "proprietary" level of software interface), the video quality will be near-full-motion quality (30 fps). However, most systems use less than the full T1 capacity, and the video quality and stability can be degraded somewhat. Common issues for two-way T1 video instructors include audio problems (time lags and echo problems); jerky video quality, when bandwidths of less than a full T1 are employed (known as fractional T1 or "frac T" video); and instability of the signal (interference and glitches on the network cause the system to lose connection). Costs for these video systems must be balanced with the value of potential uses of the video services. T1 video networks are most often found in higher education and adult education environments. Any sort of training, professional development, advanced content and degree classes, and face-to-face interview and instruction can be carried out using T1 video networks.

3. DS3 (45 MB/s)

DS3 circuits are nearly always ordered by schools which are integrating a two-way full motion video network for distance learning and other advanced uses. Because the bandwidth is large, very high speed and complex data and information can be sent via the network. Hence, applications tend to focus on multimedia oriented computing networks and video interactive systems. Multimedia capabilities make high bandwidth networks ideal for the development and transfer of high resolution graphics, large data files, video archives, and full-motion video resources.

Limitations currently attached to the use of DS3 capacity for public schools may include justification of costs, availability of the service (true in both rural and urban settings), and time and training for teachers (to facilitate development of advanced applications to exploit the high-end networks). Because of the costs associated with building and maintaining a fiber network, and because the network must have a central control point in the form a switch capable of managing the video traffic among multiple sites, schools with DS3 networks generally have a telephone company as their technical partner.

Uses for a DS3 network include all types of teaching applications among K-12 school sites, and among partnerships including schools, higher education campuses, and community sites like hospitals, churches, and other partners. DS3 networks can multiplex (the signal can split and go to a number of locations instead of just point-to-point, like T1 video). Also, some networks are configured to permit the video signals to be integrated with data and audio on the same connection. Common uses for DS3 systems include Advanced Placement high school courses (shared among schools); degree courses for kids, teachers,and adults; adult education and GED preparation; professional development for teachers and others in the community; school-to-work transition prorgams within community networks; and teacher preparation programs in technology.

Cathey, Hutton & Associates, Inc. • Austin, TX • Broadband Services • 1996

Size, Speed and Network Capacity

Bandwidth: a designated amount of data (frequency) carried by a circuit (line).

Kilobit: a bit (abbreviation for binary digit) is a single unit of information designated as either a "1" or a "0"; kilo = 1000

A kilobit is literally 1000 bits per second (Bps = speed of circuit).
A 56 Kb/s line, therefore, is equivalent to 56,000 bits per second.

T1 circuits: carry 1.54 MB/s (megabits per second) or 1,544,000 bits per second. Network equipment running on a T1 circuit can use some of the bandwidth or all of it. The amount of bandwidth on a network is determined by the equipment (electronics), not the circuit.

DS3 circuits: carry 45 MB/s of data from point to point. Because of the high bandwidth of this circuit, the information can be multiplexed (split up and sent to different locations using a switch)

ATM: stands for Asyncronous Transfer Mode. ATM is a high speed, high capacity switched network. ATM manages "packets" of data and passes them through an ultra-fast switch; ATM is designed to carry voice, data, and video. It supports from 64 Kb/s up to 622 MB/s.

• Network Features •

Centralized switch: these devices are located somewhere on a network and are used to split, route, and direct data among remote sites on a network. These devices go by many names, like router, bridge, digital cross connect (DACS) and so on...

Dedicated service: simply means that a circuit is used exclusively by one customer for a discreet purpose. Dedicated service lessens problems like "dirt" on the line (interference), and bottle-necking (slowed or blocked data) caused by other users' demnds on the bandwidth.

Fiber optics: these transmission lines are composed of extremely thin strands (fibers) of glass. The optics are composed of laser emitters in the electronic parts of the network. Fiber optics are reliable and faster than regular "wired" networks which use metal (copper, etc.) as conductors. All fiber optic system use light to transmit information, rather than electrical energy.

SONET: Synchronous Optical Network, effective for ISDN services, including ATM; standard for optical fiber networks from 52 MB/s up to 13.22 GB/s (gigabytes per second).

APPENDIX E

CRITERIA FOR SELECTING A DL CLASSROOM

- **Classroom Design Concerns**

Effective classroom design is necessary for system organization. A network which has technical integrity helps to overcome many potential coordination obstacles and provides teachers with a sound basis for involvement with the interactive project.

Some areas of technical and educational design concerns include:

1. The interactive classrooms should be of identical design and equipment arrangement (within the physical limitations of the classroom sites in the networks) so that teachers in all districts may move among the different sites if desired.

2. A telephone should be located in or very near the interactive classroom teacher's console to provide instant communications among all remote schools sites. A facsimile machine or computer also can be located in the classroom to expedite exchange of paperwork.

3. The camera monitoring the classroom (usually set on a wide-shot of the students) should be located so that all of the students can be easily seen and so that the door to the classroom is visible in the picture. By placing the entrance to the classroom within the classroom image going out to the other sites, the remote teacher can easily monitor who enters and exits the room during the class period. Using the appropriate cameras is critical (consultants or commercial A/V-Media specialists can provide advice).

4. The classroom location should be chosen carefully, so that the students may be monitored indirectly by teachers, principal, facilitator, or another responsible person.

An ideal arrangement is constructing the classroom in or adjacent to the media center, library, computer center, or office, or any other location in the school where adults are routinely present. Also, the schools may consider running an cable to the principal's office so that a monitor can be placed there for supervision purposes.

Location of the classroom:

Each school site has the option to place the classroom anywhere in the school building, but careful consideration should be devoted to selecting the appropriate area of the school from the outset of planning efforts. The size of the classroom is very important. An ideal classroom measures at least 20 feet by 30 feet, with ceiling heights of no more than 12 feet. CHA suggests that the room be located near a source of indirect adult supervision.

Many projects choose to construct a classroom, often locating it in the media center, the library, the computer wing, or other suitable location which provides security and proper facilities for installing the equipment. CHA strongly recommends that all plans for construction and conversion of classroom space be discussed thoroughly with the installer, the construction manager, and with the various planning committees, before ordering of equipment and certainly before any building and wiring begin.

APPENDIX F

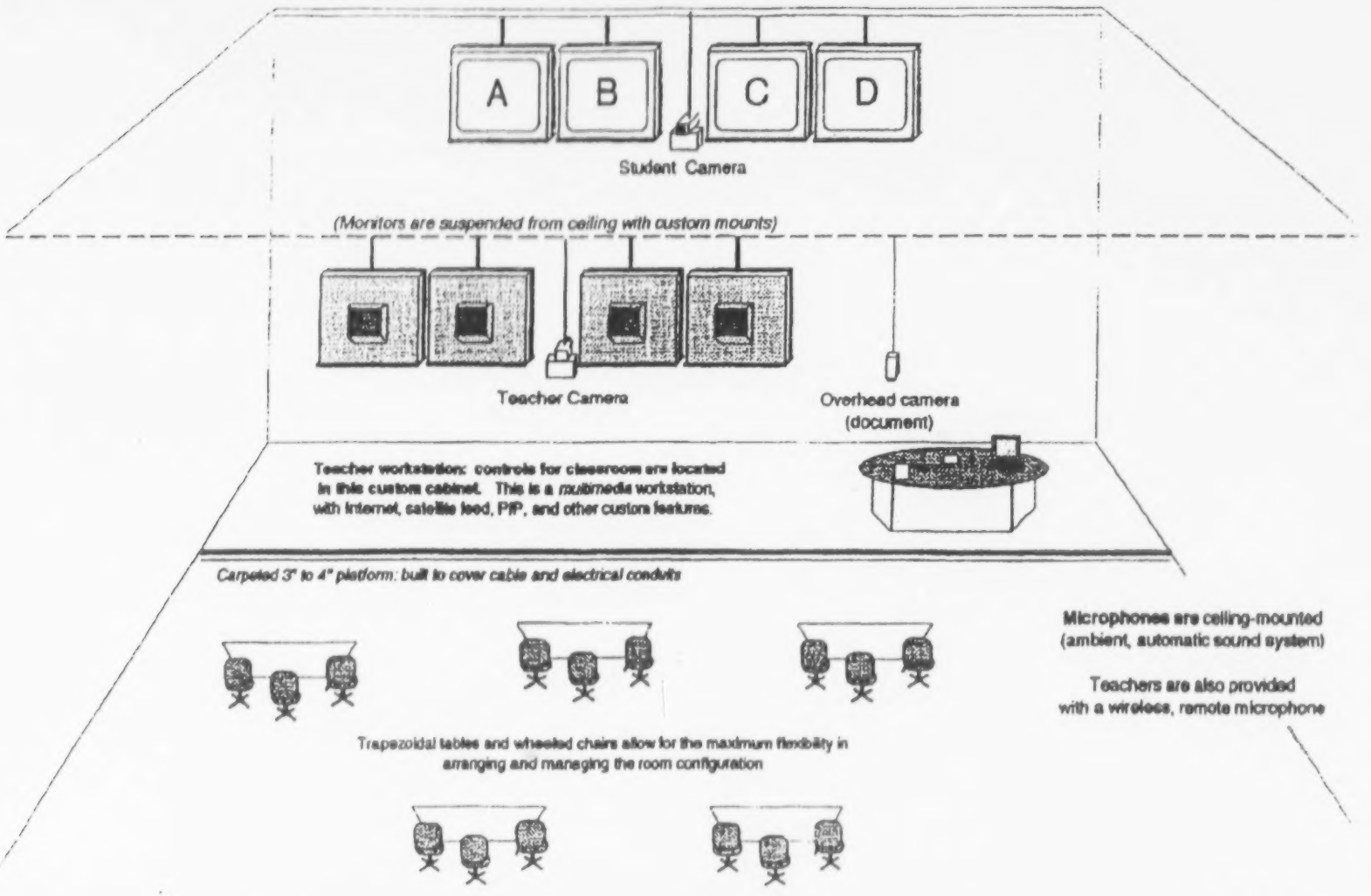
DL CLASSROOM CONFIGURATION

SCHOOL COST FRAMEWORK

MODIFICATIONS FOR DISABILITIES

Customized DS3 Classroom

Classroom Design for ET-LINC, Creating Connections


A
B
C
D
Student Camera
(Monitors are suspended from ceiling with custom mounts)
Teacher Camera
Overhead camera
(document)
Teacher workstation: controls for classroom are located in this custom cabinet. This is a multimedia workstation, with Internet, satellite feed, PIP, and other custom features.
Carpeted 3" to 4" platform; built to cover cable and electrical conduits
Microphones are ceiling-mounted (ambient, automatic sound system)
Teachers are also provided with a wireless, remote microphone
Trapezoidal tables and wheeled chairs allow for the maximum flexibility in arranging and managing the room configuration

* This drawing depicts a custom classroom equipped with **full-motion video** (dedicated analog or digital broadband) in a *multi-point, continuous presence format*
Any four remote sites can see and hear each other at any given time on this network configuration

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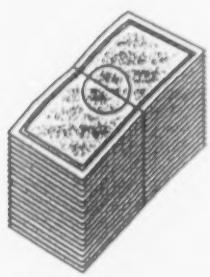
PROPERTY OF ET-LINC (CREATING CONNECTIONS PROJECT)

REMOTE SITE DL COST FRAMEWORK

I. Personnel Time
- A. Planning/development meetings
- B. Training
- C. Travel

II. Classroom Modification
- A. Teacher workstation
- B. Interior alteration
  1. Carpet
  2. Painting
  3. Ceiling
- C. Air conditioning
- D. Electrical/lighting

III. DL Hardware
- A. CODEC
- B. PTZF Remote Camera on Teacher
- C. PTZF Remote Camera on Students Overhead Document
- D. Camera Videotape recorder/player Laser Disc Player (Optional)
- E. TV Monitors (usually 6-8 per room) Microphones
- F. Recessed Ceiling Microphones (n=5) Teacher wireless remote
- G. Operator and/or Control Panel
- H. Fax/Copier/Printer Machine
- I. Multimedia PC Station (with CD-ROM) Internet Access Software
- J. Telephone
- K. Telephone Service
  1. Installation fees
  2. Monthly Telephone Line for PC & Internet Service Provider
  3. Monthly DL Telephone Transmission Line



CLASSROOM MODIFICATIONS

FOR STUDENTS/TEACHERS WITH DISABILITIES

The Distance Learning classroom is not yet governed by the Americans with Disabilities Act; however, it could easily be modified to meet the requirements:

1. Workstation (teacher console) would need to be lowered or a dual height workstation construction.

2. Ramp would need to be attached to the platform of the teacher console.

3. System might need hearing impaired transmitter.

4. System might need personal listening devices (approximately $600 per device).

APPENDIX G

LIST OF SAMPLE DL COURSES

CLASS PLANNING WORKSHEET

SAMPLE DL COURSES

HIGH SCHOOL STUDENT OFFERINGS:

Assembly Language Program

College Algebra

Introduction to Sociology

Psychology of Adjustment

Principles of Macro Economics

Problems of Communication I and II (English)

ACT/SAT Preparation

TAAS and TASP Remediation Practice

Financial Aid Workshops

Honors Colloquial

UIL Practice and Events

ADVANCED PROFESSIONAL CERTIFICATION OFFERINGS:

Teaching Students Algebraic Thinking Skills

Educational Administration of Special Programs

School Business Administration

Planning and Management of Educational Facilities

Finance of Public Education

Public School Organization and Administration

PLANNING WORKSHEET

FOR

_____

Name of School District

1. What type of schedule do you plan to have next year? (e.g., 55-minute periods, accelerated block, modified block, etc.). If possible, please provide proposed bell schedule.

2. Do you typically try to schedule core subjects in the morning and electives in the afternoons? Are you successful?

3. What courses would you like to offer, but do not have the resources available?

4. What courses do you have available that you would be willing to share with other districts?

5. What college courses would you like to see offered?

6. What community outreach services (courses, workshops, etc.) would be beneficial to your school district?

7. What summer activities would you like to offer? Would your students and community members be interested in college courses?

8. How does your school district plan to address the move from honors classes to the distinguished achievement high school program of study?

9. What challenges will you, as a counselor, face in scheduling two-way interactive video classes? For each challenge, please provide suggestions on how we can help you address the challenge.

10. What policies and/or procedures does your district have that will need to be addressed once your two-way interactive video system is operational?

APPENDIX H

RECOMMENDED TRAINING CONTENT

FOR DL TEACHERS

Learners:

Students report that they enjoy learning on and are motivated by interactive television. Participation in interactive courses encourages students to be self-reliant and to develop mature, organized study and learning patters. No systematic, statistically significant difference in achievement, for better or worse, was found between students taking courses taught traditionally and those in interactive television settings.

The medium does not appear to influence overall students achievement either positively or negatively.

- Issues for Teachers and Staff

While two-way interactive television is the same as "being there" for all intents and purposes it is still a technology-driven delivery system that intrinsically generates another degree of physical impersonality between students and teachers. Teachers and administrators should make an effort to "personalize" the network by adding some human touches to the system.

1. Teacher training and staff development should encourage staff to use effective elements of instruction. Basic tenets of pedagogy hold true for interactive classes as for traditionally-taught ones -- active participation should be especially encouraged for both teacher and student.

2. Meeting with the class members from all sites prior (if possible) to the initiation of on-line instruction is a key took in personalizing the class. Many teachers choose to gather class members at a central point during the first week of classes. Other formal and informal meetings should be scheduled during the year.

3. Learning names of all participants in the two-way classes is an immediate task for students and instructors. some teachers take Polaroid photographs of all participating students to make a seating chart. Others attach a piece of paper with the student's names written in the proper position to correspond with the video image coming across the monitor. Many teachers use Polaroid photos of students for a few weeks to help "put names with faces."

4. Teaching interactively, using techniques and skills taught during the experience-based hands-on training sessions, is important to the success of the network. Eye contact and name recognition are critical to the personalization process. Teachers should always teach to the camera, since it serves as the "eyes" of the remote students. At the same time, teachers must remain aware of the "home site" students. It is not uncommon for the teacher to watch the remote monitors so carefully that he or she unintentionally forgets to look at the class members who are in the same room!

5. Traveling to remote sites on the network helps teachers to humanize the interactive classes, also. It is helpful to remote students to have their classroom serve as the "home site" occasionally. The number and scheduling of the teachers visits should be determined cooperatively by the building principals and the teachers. Decisions about arrangements for teachers to travel between sites and other issues regarding remote site visitation should be decided before the class schedule is initiated.

6. Use the media to enhance effectiveness as often as is practical. The equipment in a two-way classroom lends itself well to effective transfer of information in a variety of ways. Teachers should practice ways to use camera angles, close-up shots, other audio-visual tools, and other media techniques commonly used in the classroom.

7. Be aware of student feelings and personalities when humanizing the interaction between sites. School rivalries may surface as a matter of course, and should be dealt with in a no-nonsense manner. Avoid pitting one school against another in an academic contest.

   The exception to this rule might be spelling bees (for fun only!) or debate practices, where students understand that the purpose is for fun and to practice skills, not establish which school is superior.

8. Teachers should attempt to know something about their students' academic backgrounds and outside interests, to best address particular strengths and weaknesses. Also, each Monday, instructors may wish to check with students at each site to determine special events and "happenings" for that week which may interfere with class, such as pep-rallies, homecoming activities, other special programs and assemblies.

Other means of personalizing classes will be discovered by encouraging and providing opportunities for teachers and facilitators to share information and experiences.

APPENDIX I

STAFF QULIFICATIONS FOR TRAINING

Who should attend the training sessions?

Other considerations for staff development include the training of substitute teachers, stand-by teachers in each building, facilitators, and administrators; a general training session for students; and general information sessions for those teachers who may wish to teach on the network in the future. As with any new idea or change within an institution, concerns will inevitably arise. A quality staff development model will alleviate many potential problems. In many cases, training is developed so that experienced instructors can "turn-key" the information to new staff members who wish to teach on the system. Persons, besides the full-time ITV teachers and the Project Director, who may wish to participate in training sessions include:

Principals:

The building principal is a key player in the successful interconnect project. As the instructional manager and staff administrator for the individual school sites on the interconnect, the principal should be well-versed in how the classroom operates and what should be done to rectify technical or staff questions as they arise. In many cases, the principal acts as a facilitator for the classroom. For example, if a teacher is absent, the principal should be able to activate the classroom and start a pre-taped lesson prepared by the teacher for just such an emergency situation.

In other instances, the principal may wish to consult with administrators in other schools on the interconnect by using the classroom setting. In general, the principal should be able to manage the classroom equipment and should have a good overall understanding of the types of classes appropriate for the network and the techniques and support needed by the teachers who are serving as on-line teachers.

Facilitators:

In some cases, project planners assign a classroom facilitator to each online, interactive classroom. The facilitator serves as the person who is in charge of monitoring the physical arrangement within the classroom. Minor trouble-shooting, helping people from outside the school district use the system, and just generally making sure "all systems are go," are among the many daily tasks that may fall to the site facilitator. Often, the school media specialist becomes the facilitator, as a part of his or her regular duties.

The facilitator should know how to run the classroom and be able to correct minor technical flaws should they occur. It is very helpful if the person serving as facilitator attends the training, since they will gain an overall understanding of the uses of the system and some hands-on experience, valuable even if they never intend to teach online.

Substitute teachers:

In many schools, there are certain substitute teachers which are favorites among principals because they are able to cover just about any content area, or at least give it a try! Planners may wish to invite those substitute teachers to attend the formal inservice for the project, so that they will be able to substitute in the interactive classroom, also. Substitutes may be able to completely cover for the absent interactive teacher, or may in other cases, work with a pre-taped lesson left by the regular online teacher.

Classroom assistants/aides:

In cases where there are classroom aides or other instructional assistants available in the school, these people should also receive training in the use of the interactive network. They could act as backup personnel to the interactive teacher and to the facilitators, and also will have a better understanding of the support requirements of staff who are teaching on-line.

Teachers:

Teachers who plan to teach on the system can gain the hands-on training experience needed when the system becomes operational. It is essential that all teachers and facilitators understand both the technical and the human implications of the system and how the integration of the technology will affect their jobs and their students. Since the success of the two-way system depends directly upon teacher understanding and support of the concept, it is critical that all professionals involved in on-line interaction over the system receive a high-quality introduction to the technology.

Even if a teacher feels that he or she may never want to teach a full-time online class, familiarity with the system will allow them to use the interactive system to conduct meetings and otherwise employ the tools in the interactive classroom.

SPECIAL NOTE TO PLANNERS: Interactive networking is a "show-me" technology. As planning and implementation stages for an interactive network progress, many normal concerns and questions will arise. The majority of schools agree that sharing resources efficiently is important to the future. Two-way interactive telecommunications is certainly an exciting, practical way to do just that. Video tapes of operational systems can give the viewer a basic feel for the way interactive television looks, sounds, and behaves in a real classroom.

There is no substitute for experience, however. If at all possible, superintendents, principals, and teachers should visit an operational system. No amount of explanation from a consultant or any other person can substitute for an on-site visit. Planners for the network should at least have the opportunity to talk with administrators, teachers, and/or students who are experienced in use of two-way interactive television systems.

In general, it is a good idea to have a variety of staff within each school who understand and are comfortable with the technology and the techniques involved in the interactive classroom. The interactive network really does involve the whole school at some point in its existence. Use of the classrooms will be encouraged in teachers who aren't necessarily planning to teach classes on-line still understand its uses and impact on the school.

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APPENDIX J

SAMPLE STUDENT CONTRACT

RELEASE FORM

ET-LINC STUDENT POLICY
East Texas - Learning Interactive Network Consortium

School District _____

A Broadband network with Interactive Television is a means for districts to provide low-incidence courses that normally would not be offered to students because of low enrollment or lack of qualified personnel.

Because of the uniqueness of Interactive Television, certain standards are expected of students enrolling in these courses. This contract is intended to make both the students and the parents aware of the standards expected of students enrolling in such courses. As a student taking an Interactive Course, I am aware that:

1. I will be on time to the class; I will remain in the classroom until the class period is completed.
2. I will have materials prepared as requested by the instructor.
3. I will work cooperatively with the instructor and with other students as requested by the instructor.
4. I will remain on task during the instructional period.
5. I will sit within the camera view at all times.
6. I will follow the local district code of conduct.

I have read and I understand the policy above and agree by the rules of this contract.

_____	_____
Student Signature	Date
_____	_____
Parent Signature	Date
_____	_____
Sending School Administrator	Date
_____	_____
Receiving School Administrator	Date

ET-LINC
DISTANCE LEARNING CLASSROOM
RELEASE FORM

I undersigned, _____, hereby grant the Gladewater ISD permission to make broadcasts, videotapes, photographs, and/or sound recordings, separately or in combination, of me and permission to use the said broadcasts, videotapes, photographs, and/or sound recordings for educational purposes on any delivery system distributing Gladewater ISD programming.

_____ _____
(Signature) (Date)

_____
(Campus or Organization - club)

_____
(Signature of parent/guardian if under 18 years of age)

APPENDIX K

DL CLASSROOM BEHAVIOR/DISCIPLINE

DL CLASSROOM BEHAVIOR/DISCIPLINE

As in all classroom situations, the potential for disorganization and misbehavior to occur is also present in the interactive classroom. Management and discipline problems simply loom larger than usual when they are attached to a technology-based situation. Because the schools in an interactive system are physically distant from one another, some special planning and preparations must occur to handle such issues.

Such issues as behavior management of students, handling of materials and homework, and other concerns caused by the physical remoteness of the cooperating schools should be discussed during early planning stages.

Establish rules and procedures before the interconnect is operational.

Among the first concerns of a teacher or principal regarding interactive instruction relates to how the teacher will manage a discipline problem if it occurs in a remote site, where frequently there are no adults present. One way of lessening the probability of misbehavior on the parts of students is to initiate a ***behavior contract or agreement*** at the beginning of the course. Such an agreement consists of a written statement outlining for the students their rights and responsibilities as a participant in this alternative instructional setting. The document also should spell out the consequences of misbehavior, along with a description of what constitutes "misbehavior".

Consequences and punishments can range from one-day suspension from the class to permanently banning that student from ever taking another interactive course. Behavioral contacts are typically signed by the principal, the teacher, the students, and their parents. Other safeguards that prevent serious discipline problems in the interactive classroom are often instituted by projects, including:

1. A separate monitor showing the activity in the classroom can be cabled out to the principal's or superintendent's office. That monitor is left on at all times and can be supervised by an adult.

   Any misbehavior is literally broadcast to a person in authority, outside the classroom. The students are informed that such an arrangements exists. Aside from discipline control, the monitor serves as a security device and tool for overseeing the condition of the classroom from a remote location.

2. The VCR that is built into every classroom can serve to discourage bad behavior, since the students are aware that the teacher can videotape any actions they might make and use it as evidence of poor student conduct as is explained in the behavioral contract agreement.

3. Every classroom has a telephone that is usually dedicated to the other schools' classrooms and principal's offices. This direct connection to the other schools permits fast action at the remote sites if there is an emergency or if someone needs to be removed from the classroom. It also is handy if there is a technical problem (camera out of focus or off-line, poor audio quality, etc.) because the students can use the phone to communicate with their teacher.

4. Most schools choose to locate their interactive classroom sites in an area of the building that receives indirect adult supervision -- adjacent to the library/media center, or to the office, for instance. This proximity to adult supervision tends to lessen the chance that bad behavior will occur.

5. In many interconnects, the students who are in the majority of those enrolled in interactive classes tend to be self-motivated and high-achievers. Since many of the classes for secondary students are electives and advanced placement courses the students really need or want, the threat of removal or banning from the classroom is more than sufficient to eliminate misbehavior.

6. In situations where students require assistance or need supervision, a classroom aide or facilitator can be assigned for that particular class. That person need not be a certified teacher, since the remote (originating) teacher is certified.

APPENDIX L

DISTRICT TEACHER COORDINATOR JOB DESCIPTION

CREATING CONNECTIONS: A PROJECT OF ET-LINC

DISTRICT TEACHER COORDINATOR JOB DESCRIPTION

Qualifications:

- Faculty member of participating school district
- Considered master teacher
- Highly regarded as a professional by other teachers, students, and community
- Willing function in role as trainer of trainers of other users in the district
- Willing to function in leadership role as member of Creating Connections Project and communicate with local district and community

Stipend:

- (Paid directly to the Teacher Coordinator two payments)
  (June 1996 and December 1996)

Participation Requirements

- Assist in planning/implementation process at the local level
- Assist as needed in documentation for process journal/evaluation
- Serve as the project contract person the district
- Work with students, educators and businesses at local level in order to assess problems, concerns, and the potential use of distance learning to help establish a non-traditional educational environment
- Participate in comprehensive training program of approximately 12 days
- Coach local teams to facilitate planning/implementation of project at the local level

- Help connect district mission and campus improvement plans in order to enhance existing technology plans; assist in identifying funding sources

- Collect and organize project data and information, and assist the core team
members to evaluate, quality, and tap into systematic change in order to gauge the progress and success of the planning strategy

- Serve in public relations capacity with professional organizations

- Coordinate with principal/counselor course offerings for master scheduling

- Coordinate with Core Team Member uses for master scheduling; serve as contact person for business/community uses

APPENDIX M

ATTRIBUTES OF DL SYSTEM DIRECTOR

ATTRIBUTES OF DL SYSTEM DIRECTOR

- **Project Director**

Many projects choose to hire a Project Director when implementation of the system is proposed. A considerable amount of detail and attention is required to construct and initiate a two-way interactive project. while superintendents often serve as project directors in initial phases of implementation, it should be noted that most superintendents already have a full-time job! The volume of detail work and follow-up responsibilities can be overwhelming once construction of the classrooms begins, and probably should not be added to anyone's current job responsibilities.

If the cooperating schools choose to hire a project director, the following attributes are valuable:

1. The Project Director should have a considerable talent for dealing with people. The technologies involved in a two-way interactive network are not especially complicated, but establishing and maintaining cooperation among the personnel using the network can be a very demanding task.

2. A candidate for Director should have some experience in dealing with technologies in education. Background in dealing with computers is helpful, but not required. Experience with video technologies (production, programming) is more helpful to a potential director.

3. A Project Director may be hired from within the existing district staff. Familiarity with the district's policies and customs is helpful, since an incoming director should be responsible for working with scheduling and managing inservices, meetings, and all other events that involve online activities on the network.

4. The director is the liaison for the system to the community and is responsible for scheduling events sponsored by non-school personnel (community education, business meetings and training sessions for local industries, club and organization meetings, etc.)

5. Project Directors should be well-versed in curriculum management and coordination. Although the project committees and curriculum directors for individual schools are responsible for identifying and agreeing upon classes to be taught on the system, the Director must often serve as the "traffic manager" for the information.

   Since schedule coordination (including matching bell schedules and calendars) can be the most elusive and frustrating part of managing a system, it helps to have one person identified and in charge of overseeing the task.

6. The Project Director should serve as a technical liaison for all the schools involved in the cooperative network for the purpose of trouble-shooting, adding or upgrading equipment, and expanding or maintaining the system. The application of two-way interactive television is still quite recent, and many equipment vendors do not understand the needs and wants of a school interconnect project.

   The Director should establish and maintain contact with local technical specialists (in cable and phone industries) to form a safety net of experts to assist the schools technically. Most schools negotiate a maintenance contract with a local service provider.

7. The Project Director should be experienced at making presentations before groups, and should have some expertise in the area of staff development and training. Since many of the districts involved in two-way interactive projects are rural and isolated, it is usually advantageous to the member schools to be able to train new teachers themselves as the need arises.

   Usually, formal inservice training is arranged in a "turn-key" fashion so that the schools may replicate the instruction themselves, rather than engaging an outside professional inservice for re-training sessions. The director is in charge of scheduling, managing, and developing on-going inservice programming.

APPENDIX N

ET-LINC DL GOVERANCE REGULATIONS

ET-LINC DL GOVERNANCE REGULATIONS

Distance Learning Classroom Rules and Regulations

Established by ET-LINC

ET-LINC officers and Core Team members have drafted the following guidelines for school districts who have received distance-learning classrooms through the Creating Connections grant. In the event that a school does not adhere to these guidelines, the officers of ET-LINC will issue a request for compliance to the following rules. If the school is experiencing a change in leadership or problems fiscal in nature, the district may explain its status to the officers of ET-LINC. In the event that a second warning is issued to the district, ET-LINC members may, by majority vote at a called meeting, remove the equipment from the school district site and install the equipment at a site that will adhere to the guidelines.

1. Board of Trustees will approve budget allocations for continued fiber fees. Copies of these budget, or the minutes of the meeting where action was taken, will be mailed to the President of ET-LINC. signed contracts should be returned to the telephone companies.

2. Each district shall make a commitment to use the classroom a minimum of four hours per day. Schedules of curriculum offerings will be mailed to the President of ET-LINC.

3. Every district shall send at least one offering to other districts.

4. At least one community, youth, or business organization will utilize the classroom. Minutes or sign-in sheets of those meetings held on-line will be mailed to the President of ET-LINC.

As the distance learning system grows, the rules and regulations may change if approved by the members of ET-LINC at a duly called meeting.

APPENDIX O

LIST OF HOW-TO MANUAL CONTRIBUTORS

LIST OF HOW-TO MANUAL CONTRIBUTORS

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